

### ABSTRACT

For promoting tissue regeneration on wound surfaces (1) e.g. to intergrow with other wound surfaces or with an implant, or to heal into tissue surfaces, mechanical oscillation is coupled into the wound surfaces. A treatment instrument (2) being coupled to an oscillation drive (electrical/mechanical oscillation transducer) is brought into contact with the wound surface (1), or an implant is impinged with oscillation during and/or after being positioned in the tissue. Ultrasonic oscillation is particularly suitable for the treatment. The oscillation acts mechanically and thermally on the tissue in the region of the treated wound surface (1), and according to the intensity acts in a stimulating, traumatic, necrotic or cell-destroying manner, by which means biological elements inhibiting tissue regeneration are destroyed or denatured and by which means the metabolism in the region of the wound surface is stimulated. The effect may also be a mechanical one, slightly compacting or regionally dislocating the tissue. Since the treatment can be effected during or after positioning an implant, necrosis in particular effects undesired cells, such as connective tissue cells, mucous cells and diseased cells having been brought to the wound surface with the implant, which cells may inhibit the intergrowth between tissue and implant. Treatment instruments (2) or implants applicable for the treatment are designed as oscillation bodies. They are coupled or couplable to an oscillation drive or they comprise a coupling surface against which a sonotrode is pressed. At their distal end they comprise contact surfaces with energy directors.

(Fig.1)